

- a heater capable of bringing the temperature of said sensitive element to a range of 300 and 500°C;
- b) - continuously observing the resistance variations of the sensitive elements by interaction with MTBE,
- comparing the signals emitted by the sensor in the earth and the sensor in the air on the ground-surface; and
- evaluating on the basis of this comparison the presence and concentration of MTBE in the surface layers or depths of the ground and in the atmosphere above the ground itself.

21 2. (Amended) The process according to claim 1, wherein the sensitive element is produced with tin oxide.

3. (Amended) A device for determining methyl ter butyl ether (MTBE) vapours comprising:

a) a series of sensors of MTBE vapours each comprising a sensitive element produced with

- a 40 micron layer of semiconductor metal oxide containing 1% by weight of platinum,
 - a heater capable of bringing the temperature of said sensitive element to a range of 300 to 500°C,
- at least one of said sensors being equipped with a membrane permeable to gases and impermeable to water for the protection of said sensitive element;

b) an electronic evaluation system configured to continuously record the variations in resistance of the sensitive elements by interaction with MTBE.

4. (Amended) The device according to claim 3, wherein the semiconductor metal oxide is tin oxide.